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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MISLEH, JUSTIN P

ART UNIT PAPER NUMBER

2612

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/400,549	Applicant(s) NODA, HIROSHI	
	Examiner Justin P. Misleh	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 20 - 26 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 20 - 26 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to **Claims 20 –26** have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. **Claim 26** is objected to because of the following informalities: language inconsistencies.
  - o The language recites therein, “a focus adjustment unit performing the focus adjustment operation on the basis of the photoelectric conversion signal corrected by said correction unit;” however, a “correction unit” has not been previously introduced. For the purposes of examination, the Examiner will interpret the above-recitation as follows: “a focus adjustment unit performing the focus adjustment operation on the basis of the photoelectric conversion signals.”

**Appropriate correction is required.**

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 20 – 23** are rejected under 35 U.S.C. 102(e) as being anticipated by Rashovskiy et al.

5. For **Claim 20**, Rashovskiy et al. disclose, as shown in figures 2 – 12 and as stated in columns 2 (lines 33 – 56, 66, and 67), 3 (lines 1 – 22 and 55 – 67), 4 (lines 1 – 67), and 5 lines 1 – 25), an image processing apparatus (16):

a read-out unit (18) reading out a photoelectric conversion signal accumulated in a pixel for a first accumulation duration, the photoelectric conversion signal including a first noise component (Figure 3 shows at least three noise frames 24 – the Examiner considers the first accumulation duration to correspond to the first noise frame 24 of the three noise frames 24);

an operation unit (28) operating correction value corresponding to the first noise component on the basis of (The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52):

(1) a correction value (see formulas spanning columns 4 and 5) corresponding to a second noise component accumulated in the pixel for a second accumulation duration (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the second noise frame 24 of the three above-stated noise frames 24 to be the correction value corresponding to the second accumulation duration),

(2) a correction value (see formulas spanning columns 4 and 5) corresponding to a third noise component accumulated in the pixel for a third accumulation duration (Since the claim language does not specific how the correction value is determined or obtained,

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the Examiner simply considers the third noise frame 24 of the three above-stated noise frames 24 to be the correction value corresponding to the third accumulation duration), and

(3) information on the first accumulation duration (As stated above, The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52); and

a correction unit (22) correcting the photoelectric conversion signal using the correction value corresponding to the first noise component (see formulas in columns 4, line 52 – 5, line 25).

6. As for **Claim 21**, Rashovskiy et al. disclose, as shown in figure 3 and as stated in columns 3 (lines 55) – 4 (line 4), a noise frame average computed all three of the above-stated noise frames (24); thus, it must that the correction values corresponding respectively to the second and third noise components is obtained in advance, as claimed.

7. As for **Claim 22**, Rashovskiy et al. disclose, as stated in columns 2 (line 66 and 67) – 3 (line 11), wherein the correction value corresponding to the second noise component is information on fixed pattern noise of a plurality of the pixels.

8. For **Claim 23**, Rashovskiy et al. disclose, as shown in figures 2 – 12 and as stated in columns 2 (lines 33 – 56, 66, and 67), 3 (lines 1 – 22 and 55 – 67), 4 (lines 1 – 67), and 5 lines 1 – 25), an image processing apparatus (16):

a read-out unit (18) reading out a photoelectric conversion signal accumulated in a pixel for a first accumulation duration, the photoelectric conversion signal including a first noise

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component (Figure 3 shows at least three noise frames 24 – the Examiner considers the first accumulation duration to correspond to the first noise frame 24 of the three noise frames 24);

an operation unit (28) operating correction value corresponding to the first noise component on the basis of (The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52):

(1) a correction value (see formulas spanning columns 4 and 5) corresponding to fixed pattern noise of a plurality of pixels (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the all of the three above-stated noise frames 24 to be the correction value corresponding to the fixed pattern noise; see columns 2, line 66 and 67 – 3, line 11),

(2) a correction value (see formulas spanning columns 4 and 5) corresponding to a second noise component accumulated in the pixel for a second accumulation duration (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the second noise frame 24 of the three above-stated noise frames 24 to be the correction value corresponding to the second accumulation duration), and

(3) information on the first accumulation duration (As stated above, The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52); and

a correction unit (22) correcting the photoelectric conversion signal using the correction value corresponding to the first noise component (see formulas in columns 4, line 52 – 5, line 25).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 24 –26** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Rashovskiy et al.*

11. For **Claim 24**, Rashovskiy et al. disclose, as shown in figures 2 – 12 and as stated in columns 2 (lines 33 – 56, 66, and 67), 3 (lines 1 – 22 and 55 – 67), 4 (lines 1 – 67), and 5 lines 1 – 25), an image processing apparatus (16):

a read-out unit (18) reading out a photoelectric conversion signal accumulated in a pixel for a first accumulation duration, the photoelectric conversion signal including a first noise component (Figure 3 shows at least three noise frames 24 – the Examiner considers the first accumulation duration to correspond to the first noise frame 24 of the three noise frames 24);

a memory storing in advance (see paragraph below for a detailed explanation of this feature) a correction value corresponding to a second noise component accumulated in the pixel for a second accumulation duration (second of the three above-stated noise frames 24) and a correction value corresponding to a second noise component accumulated in the pixel for a second accumulation duration (third of the three above-stated noise frames 24);

an operation unit (28) operating correction value corresponding to the first noise component on the basis of (The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52):

(1) a correction value (see formulas spanning columns 4 and 5) corresponding to a second noise component accumulated in the pixel for a second accumulation duration (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the second noise frame 24 of the three above-stated noise frames 24 to be the correction value corresponding to the second accumulation duration),

(2) a correction value (see formulas spanning columns 4 and 5) corresponding to a third noise component accumulated in the pixel for a third accumulation duration (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the third noise frame 24 of the three above-stated noise frames 24 to be the correction value corresponding to the third accumulation duration), and

(3) information on the first accumulation duration (As stated above, The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52); and



a correction unit (22) correcting the photoelectric conversion signal using the correction value corresponding to the first noise component (see formulas in columns 4, line 52 – 5, line 25).

Regarding the memory limitation, Rashovskiy et al. disclose, as shown in figures 14 and 15 and as stated in columns 5 (lines 37 – 68) and 6 (lines 1 – 7), a digital camera incorporating the image processing apparatus, wherein the image processing apparatus is comprised of mainly a computer (14) and microprocessor (80). Rashovskiy et al. specifically indicates that the memory (88) is a critical component of both the computer (14) and microprocessor (80) especially for the purposes of bus communication. Furthermore, Rashovskiy et al. disclose, as shown in figure 3 and as stated in columns 3 (lines 55) – 4 (line 4), a noise frame average computed all three of the above-stated noise frames (24); thus, it must that the correction values corresponding respectively to the second and third noise components is obtained in advance, as claimed. The formulas spanning columns 4 and 5 of Rashovskiy et al. would be impossible to compute without the assistance of the memory (88). So, albeit it is not specifically stated, it is inherent to Rashovskiy et al. to stores the correction values in the memory (88).

Finally, Rashovskiy et al. disclose, as shown in figures 14 and 15 and as stated in columns 5 (lines 37 – 68) and 6 (lines 1 – 7), a typical digital camera including the necessary components for capturing a focused image; however, Rashovskiy et al. does not specifically address a control unit effecting control so that a focus adjustment operation is started in response to a first operation of an operation button and a photographing operation is performed in response to a second operation of the operation button on the basis of conditions adjusted based on the focus adjustment operation.

However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and advantages of providing the above-stated focus adjustment and photographing features in a digital camera are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to provide the above-stated focus adjustment and photographing features in the Rashovskiy et al. digital camera for the advantage of allowing a user/photographer maximum flexibility in capturing an ideal image. In other words, providing such a feature would provide a user/photographer with the ability compose an image to his/her personal taste.

12. As for **Claim 25**, Rashovskiy et al. disclose, as stated in column 5 (lines 61 – 66), that the noise reduction routine (28) is stored in the memory (88); thus, the memory (88) would have to be nonvolatile memory. If such a memory were not present in Rashovskiy et al., the digital camera of the same would fail in operation.

13. For **Claim 26** (please claim objection above), Rashovskiy et al. disclose, as shown in figures 2 – 12 and as stated in columns 2 (lines 33 – 56, 66, and 67), 3 (lines 1 – 22 and 55 – 67), 4 (lines 1 – 67), and 5 lines 1 – 25), an image processing apparatus (16):

a read-out unit (18) reading out a photoelectric conversion signal accumulated in a pixel for a first accumulation duration, the photoelectric conversion signal including a first noise component (Figure 3 shows at least three noise frames 24 – the Examiner considers the first accumulation duration to correspond to the first noise frame 24 of the three noise frames 24);

a memory storing (see paragraph below for a detailed explanation of this feature) a correction value corresponding to corresponding to fixed pattern noise of a plurality of pixels (first of the three above-stated noise frames 24) and a correction value corresponding to a second

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noise component accumulated in the pixel for a second accumulation duration (third of the three above-stated noise frames 24);

an operation unit (28) operating correction value corresponding to the first noise component on the basis of (The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52):

(1) a correction value (see formulas spanning columns 4 and 5) corresponding to fixed pattern noise of a plurality of pixels (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the all of the three above-stated noise frames 24 to be the correction value corresponding to the fixed pattern noise; see columns 2, line 66 and 67 – 3, line 11),

(2) a correction value (see formulas spanning columns 4 and 5) corresponding to a second noise component accumulated in the pixel for a second accumulation duration (Since the claim language does not specific how the correction value is determined or obtained, the Examiner simply considers the second noise frame 24 of the three above-stated noise frames 24 to be the correction value corresponding to the second accumulation duration), and

(3) information on the first accumulation duration (As stated above, The operation unit operates not only a correction value corresponding to the first noise frames 24 but corresponding to all three of the above-stated noise frames 24; see column 3, line 55 – column 4, line 52); and

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a focus adjustment unit performing the focus adjustment operation on the basis of the photoelectric conversion signals (see figures 14 and 15 and columns 5 (lines 37 – 60).

Regarding the memory limitation, Rashovskiy et al. disclose, as shown in figures 14 and 15 and as stated in columns 5 (lines 37 – 68) and 6 (lines 1 – 7), a digital camera incorporating the image processing apparatus, wherein the image processing apparatus is comprised of mainly a computer (14) and microprocessor (80). Rashovskiy et al. specifically indicates that the memory (88) is a critical component of both the computer (14) and microprocessor (80) especially for the purposes of bus communication. Furthermore, Rashovskiy et al. disclose, as shown in figure 3 and as stated in columns 3 (lines 55) – 4 (line 4), a noise frame average computed all three of the above-stated noise frames (24); thus, it must that the correction values corresponding respectively to the second and third noise components is obtained in advance, as claimed. The formulas spanning columns 4 and 5 of Rashovskiy et al. would be impossible to compute without the assistance of the memory (88). So, albeit it is not specifically stated, it is inherent to Rashovskiy et al. to stores the correction values in the memory (88).

Moreover, Rashovskiy et al. disclose, as shown in figures 14 and 15 and as stated in columns 5 (lines 37 – 68) and 6 (lines 1 – 7), a typical digital camera including the necessary components for capturing a focused image; however, Rashovskiy et al. does not specifically address a control unit effecting control so that a focus adjustment operation is started in response to a first operation of an operation button and a photographing operation is performed in response to a second operation of the operation button on the basis of conditions adjusted based on the focus adjustment operation.

However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and advantages of providing the above-stated focus adjustment and photographing features in a digital camera are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to provide the above-stated focus adjustment and photographing features in the Rashovskiy et al. digital camera for the advantage of allowing a user/photographer maximum flexibility in capturing an ideal image. In other words, providing such a feature would provide a user/photographer with the ability compose an image to his/her personal taste.

Moreover, Rashovskiy et al. disclose, as stated in column 2 (lines 66 and 67) and column 3 (lines 1 – 11), a plurality of accumulation durations corresponding to first, second, and third noise frames (24; see figure 3). However, Rashovskiy et al. does not specifically disclose the duration of each of the noise frames. In other words, Rashovskiy et al. does not disclose wherein the first and second noise frames are different from each other in length thereof.

However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and advantages of providing the above-stated length differential in noise frames in a noise-reducing image processing apparatus are well known and expected in the art. At the time the invention was made, it would have been obvious to one with ordinary skill in the art to provide above-stated length differential in noise frames in the Rashovskiy et al. noise-reducing image processing apparatus for the advantage of increasing the dynamic range of the outputted digital images.

*Conclusion*

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Ngoc Yen Vu can be reached on 571.272.7320. The fax phone number for the organization where this application or proceeding is assigned is 571.273.3000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM

January 21, 2006

  
NGOC-YEN VU  
PRIMARY EXAMINER